

CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Yellowstone County 2-D Seismic Permit #1593
Proposed Implementation Date:	June 2013
Proponent:	TGC Industries, Inc. and DeCa Resources, USA, LLC
Location:	Section 16, Township 1 North, Range 24 East (Common School Trust) Section 20, Township 1 North, Range 24 East (Common School Trust) Section 8, Township 1 North, Range 25 East (Common School Trust)
County:	Yellowstone County

I. TYPE AND PURPOSE OF ACTION

The Proponent has applied to the DNRC for a Seismic Exploration Permit to conduct a 2-D seismic project on three Trust land sections listed above in Yellowstone County. The acquisition of this subsurface data will aid in the search for oil and gas development by more accurately defining drill targets and potentially lessening the number of wildcat wells. DeCa Resources USA, LLC is the current oil and gas lessee on all three of the Trust land parcels. The proposed project would utilize five Vibrosis units to acquire the data. Receiver lines would be aligned in a North-South direction on Section 8 (see Exhibit B) while the line would run from the northeast to the southwest diagonally across Sections 16 and 20 (see Exhibit A). The lines will be laid by workers on foot and a data recording truck would record all information from the cables.

Some minor surface impacts to the Trust land may result from the Vibrosis units and the motorized vehicles traveling on the Trust land. The project will be completed by laying line and geophones on the Trust land and some other nearby private lands with the entire project lasting approximately 2 weeks. It would result in the temporarily disturbance of some surface area during that time. The entire project on Trust and private lands entails approximately 20 miles of line with around 3.5 miles of that being located on Trust land or roughly one day per mile of line. Rubber-tired motorized vehicles consisting of ATVs, pick-up trucks, Vibrosis units, and a data recording truck would be used for all proposed activities, along with foot travel where possible for line location/relocation. Vehicles would be allowed to access the proposed route off of the existing roads provided the most direct, least erodible route is utilized.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

No formal public scoping was performed by the Southern Land Office (SLO) for this proposed project. The state grazing lessees Kristin Spanjian, Cove Creek Grasslands, LLC and Steve Cellmer were all contacted by the DNRC and the agent for TGC, Beyond Horizon, LLC. Lessee settlements were only obtained from Steve Cellmer, the other lessees did not respond to phone calls and USPS letters from the Proponent.

The proposed project area was inspected on 26 April 2013 by Jeff Bollman, SLO Area Planner and Gary Brandenburg, SLO Land Use Specialist. An additional site visit was performed by Jeff Bollman on 10 June 2013 to examine the proposed access route into Section 16 from its far northeast corner and to examine alternate routes across the north fork of Cove Creek for the equipment to reach the proposed seismic line start point. On 13 June 2013, Jeff Bollman and Gary Brandenburg met Curt Casterline with Beyond Horizon and walked the potential access route in from the northeast corner of Section 16. During that field visit, Kristin Spanjian, lessee of Section 16, came out and discussed the project and expressed her opposition to it and any future oil and gas exploration on the Trust land.

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

None.

3. ALTERNATIVES CONSIDERED:

Proposed Alternative: Approve the issuance of Seismic Permit #1593 to allow 2-D seismic work on three sections of Trust land in Yellowstone County.

No Action Alternative: Deny the request by TGC to issue Seismic Permit #1593.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT
<ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i>

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

The soils in the proposed project area in Sections 16 and 20 vary from sandy and silty loams, clay loams with some scattered rock outcroppings. Due to exposed ridges, rock outcroppings and steep slopes that exist on both of these sections a stipulation will be added to the Permit that will prohibit vehicle travel on slopes that exceed 25%.

In Section 8-1N-25E, the soils generally consist of sandy and clay loams in the areas where the seismic work is proposed along the west section line.

On all three sections a stipulation will be added that all motorized vehicle use would be limited to existing roads and cross country travel by the most direct, least erodible route off of an existing road to place and retrieve the cables, and drive the Vibrosis units and recording vehicle. Additionally, motorized vehicle use would occur only during dry or frozen soil conditions to minimize any soil erosion, compaction, and rutting. Any and all disturbed areas would be seeded with a native grass seed mix when soil conditions are appropriate. No significant adverse impacts to geology and soil quality, stability and moisture are anticipated by the granting of the Permit.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:

Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

Section 16, T1N, R24E contains three springs that all are located east of the proposed seismic line by more than 300', the minimum distance required by permit stipulations. The closest spring is approximately 600' east of the line and is generally located in the NW¼NW¼SW¼. The line does cross Cove Creek and an unnamed tributary of Cove Creek that runs generally west to east in the N½S½ of the section. During the SLO site visit, there were locations scouted where the equipment could cross Cove Creek, but it does require traveling west of the proposed line to a point where Cove Creek no longer has a steep, cut bank.

Section 20, T1N, R24E contains a stockwater well in SE¼NW¼NE¼ and a minimum separation of 300' must be provided between the well and the seismic line. This may require the line to be relocated to accommodate this separation requirement (see Exhibit C for approximate well location). Additionally, Little Cove Creek runs from west to east in the N½ of the section and required minimum separation distances must be maintained or stream crossing avoided if it is carrying water.

Section 8-1N-25E contains a stockwater well in SE¼SW¼, near the south section line on the west side of Highway 3. The seismic route is proposed to travel along the west section line, almost one-half mile west of the well, beyond the required 300' separation. There are also two unnamed intermittent tributaries to South Fork of Alkali Creek, one of which runs through the far southwest corner of the property and the other that runs through the NW¼NW¼. Both of these drainages can be easily crossed with equipment during dry conditions.

A stipulation will be added to the Permit that prohibits crossing of intermittent creeks when they are carrying water or if they are dry to prohibit crossing in areas with cut banks to reduce erosion risk and surface damage. Additionally, a stipulation will be added that will require a 300 foot minimum separation from these existing wells and springs. Based on these restrictions, no significant adverse impacts to water quality, quantity or distribution are anticipated.

6. AIR QUALITY:

What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

No significant impact is expected to air quality, although there may be a minor temporary increase in particulate emission from machinery during the proposed seismic activities. No significant adverse impacts are anticipated.

7. VEGETATION COVER, QUANTITY AND QUALITY:

What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The nature of the proposed activity will cause some vegetative disturbance due to the need to drive across areas which do not presently have established roads. However, all motorized vehicle use would be limited to existing roads and cross country travel would be by the most direct, least erodible route off of an existing road to place and retrieve the seismic cable, and to operate the Vibrosis units and recording vehicle. The immediate area where the vibrating weight platform is placed on the ground would cause some vegetative disturbance. All vehicles would be required to be washed, particularly the undercarriage, to ensure removal of dirt and plant material and seeds prior to entering the tract. All motorized vehicle use would occur only during dry or frozen soil conditions to minimize soil erosion, compaction, and rutting. Any and all disturbed areas would be seeded with a native grass seed mix when soil conditions are appropriate. A search of the Montana Natural Resource Information System (NRIS) database revealed no unique plants on this section and none were observed during the SLO field inspection. No long term significant adverse impacts are expected.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

A variety of big game (mule deer and antelope on all sections and elk on Sections 16 and 20), small mammals, raptors, songbirds, and grouse may traverse the subject sections. The proposed project activities could temporarily disrupt wildlife movement and patterns. Due to the limited duration (approximately one day on each section), area proposed for the project activities and time of year proposed most nesting and calving activities should not be affected. No significant adverse impacts to terrestrial, avian and aquatic life and habitats are expected to occur as a result of implementing the proposed alternative.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

A proposed project area search of the Montana Natural Heritage Program database identified six vertebrate animals that are listed as a species of concern or threatened species: Greater sage-grouse, Spotted Bat, Townsend's Big-eared Bat, Black-tailed Prairie Dog, and Milksnake.

Greater sage-grouse could occupy or traverse the proposed project area, especially Sections 16 and 20 which contain an abundance of sagebrush; however no leks have been identified near either section by Montana Fish, Wildlife & Parks (FWP). There was a lek identified on Section 4-1N-25E by FWP that is located approximately two (2) miles northeast of the proposed seismic line, which is along the west section line of Section 8-1N-25E. Section 8 does not contain any sagebrush, so it does not contain suitable habitat. Additionally, the lek is separated from the proposed seismic line by State Highway 3, which in 2011 had an average annual traffic count of 2,540 trips/day. The three proposed sections are not located in sage grouse core areas. No significant adverse impacts are anticipated.

Spotted Bat is listed as a species of concern. The proposed seismic route in Sections 16 and 20 does traverse areas that could support spotted bat due to the presence of cliffs and outcroppings that is their preferred habitat. Section 16 does contain an area known as Iron Springs that could support bat roosting and it is located over 0.50 miles east of the proposed seismic line. The Spotted Bat could traverse or forage through the subject site and they may roost outside the project area in the surrounding cliffs and outcroppings or potentially at Iron Springs. No vehicle travel will not be permitted on any slope >25% so the project should not directly impact the cliff areas of the sections or Iron Springs. No significant adverse impacts are anticipated.

Townsend's Big-eared Bat has been documented over 3 miles southeast of Sections 16 and 20. The Trust land does not contain any known caves or mines that would be used as hibernacula. Section 16 does contain an area known as Iron Springs that could support bat roosting and it is located over 0.50 miles east of the proposed seismic line. The tracts could potentially be used for foraging which occurs within an hour after sunset, so it would not be at the same time as the seismic work is being conducted. No significant adverse impacts are anticipated.

Black-tailed Prairie dogs are listed as a species of concern and occupy a portion of the NW¼ of Section 16-1N-24E and the proposed route will skirt the edge of the town. There is also a town in the SW¼ of Section 8-1N-25E and the proposed seismic line will go through a portion of the town. Due to the temporary, short-term nature of the proposed action (approximately one day on each section), no significant adverse impacts are anticipated.

Milksnake is listed as a species of concern. The area impacted by the proposed project has some habitat characteristics that are common for milksnake habitat. The Montana Field Guide shows an extensive range, that runs roughly east and south of the Missouri River. The proposed action is not expected to have a significant effect based on its extensive range and the relatively small impacted project area.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:

Identify and determine effects to historical, archaeological or paleontological resources.

The DNRC Archaeologist typically does not anticipate impacts when seismic activity is proposed, provided it is limited to times when the ground is dry or frozen. Additionally, the SLO staff visited the tracts on 26 April 2013 and conducted a visual survey of the project area. The SLO Land Use Planner also reviewed the access route to Section 16 on 10 and 13 June 2013 and also conducted a visual survey of the proposed route. No significant cultural or archaeological features were noted along the proposed seismic lines or access route. A stipulation will be added to the Permit that would require immediate notification of the DNRC if any archaeological, historic or paleontological resources are located during the proposed project activities. No significant adverse impacts to historical or archaeological sites are anticipated.

11. AESTHETICS:

Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The area around Sections 16 and 20 is sparsely populated with the exception of a subdivision that is located opposite of the northeast corner of Section 16, as well as a residence in the southeast corner of Section 9-1N-24E. The Permittee is proposing to access Section 16 thru this subdivision via Angus Avenue and Corrienta Way. A stipulation will be added to the permit that would prohibit heavy equipment staging or unloading in this subdivision or on Section 16 without prior written approval by the Southern Land Office.

The sections contain rolling terrain with a number of exposed rimrock buttes and coulees so it is not likely that there will be any significant visual impacts to the general public. A portion of the proposed line on Section 16 is viewable by the public traveling on Molt Road, north of the project area.

The proposed seismic line on Section 8-1N-25E runs roughly parallel to State Highway 3 with its closest point on the far north end being 550± feet west of the Highway. The activity will be visible from Highway 3, Shorey Road and the scattered residences that are located north and south of the section.

The entire project is expected to last for approximately two weeks and based on the total distance proposed the amount of time on each section of Trust land is estimated to be one day. Due to its location and the short duration of actual proposed project activities, aesthetics are not anticipated to be significantly adversely affected.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:

Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

No significant impacts to environmental resources of land, water, air or energy are expected as a result of implementing the proposed alternative.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:

List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

There are no other known state environmental reviews taking place in the immediate area. Depending on the results of the geophysical data, there could be a request to drill on one or more of the subject Trust land sections. A request to drill a well would require a separate environmental review that would be completed at the time a Permit to Drill is requested.

IV. IMPACTS ON THE HUMAN POPULATION
<ul style="list-style-type: none">• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i>

14. HUMAN HEALTH AND SAFETY:

Identify any health and safety risks posed by the project.

No significant adverse impacts to human health and safety are expected to occur as a result of implementing the proposed alternative.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:

Identify how the project would add to or alter these activities.

No significant impacts to industrial, commercial and agricultural activities and production are expected to occur as a result of implementing the proposed alternative.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:

Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

The proposed action will not have a significant impact on the quantity and distribution of employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:

Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

The limited duration of the proposed action and the nature of the activity are not expected to have a significant positive or negative impact to the local or state tax base.

18. DEMAND FOR GOVERNMENT SERVICES:

Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

The implementation of the proposed alternative is not expected to generate any additional demands on services provided by Yellowstone County due to the limited duration of the project.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:

List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

The subject sections are not zoned by Yellowstone County and implementation of the proposed alternative will not conflict with any locally adopted plans, including the Growth Policy.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:

Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Section 8-1N-25E has legal public access from Highway 3 and Shorey Road. It currently has a restriction on it that limits hunting to archery only. Due to the proximity of the Highway as well as the Burlington Northern Railroad tracks, the portion along the west section line where the seismic line is proposed has marginal recreational value, but could support hunting of antelope. The timing of the project will not interfere with antelope archery season.

Sections 16 and 20-1N-24E are both isolated and do not currently have legal public access. This limits their recreation value to the general public as they would need to obtain permission from an adjoining landowner to access either section.

Implementation of the proposed alternative will entail approval of an approximate two week total project time of which approximately 3 days would be on Trust land. The proposed alternative is not expected to have a significant adverse long term impact on recreational and wilderness activities on the subject parcels.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:

Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

No significant adverse impacts to density and distribution of population and housing are expected to occur as a result of implementing the proposed alternative.

22. SOCIAL STRUCTURES AND MORES:

Identify potential disruption of native or traditional lifestyles or communities.

There are no native, unique or traditional lifestyles or communities in the vicinity that would be impacted by the proposed alternative.

23. CULTURAL UNIQUENESS AND DIVERSITY:

How would the action affect any unique quality of the area?

The proposed alternative would not directly impact cultural uniqueness or diversity.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:

Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

The proposed action to issue Seismic Exploration Permit #1593 would allow for the geophysical exploration of the Trust lands and could potentially result in future revenue from oil and gas extraction.

EA Checklist Prepared By:	Name: Jeff Bollman	Date: 18 June 2013
	Title: Southern Land Office Area Planner	

V. FINDING

25. ALTERNATIVE SELECTED:

After reviewing the Environmental Assessment, the proposed alternative has been selected and it is recommended that Seismic Exploration Permit #1593 be issued with the stipulations listed below. The proposed alternative can be implemented in a manner that is consistent with the long-term sustainable natural resource management of the area.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

The potential for significant adverse impacts from the proposed action is minimal based on the type of action proposed, the relatively short duration of the testing, its location and the minimal surface disturbance. Additionally, there were no plant species of concern identified on the tract. The only animal species identified that is known to occupy two of the parcels is the Black-tailed Prairie Dog on Section 16-1N-24E and Section 8-1N-25E and the line alignment will miss the town in Section 16, but will have a minor impact to the town in Section 8. It is estimated that the equipment will be on each section for approximately one day, so the duration of impact is minimal. The other animal species identified may traverse the parcels, but are not likely to occupy it. All identified potential impacts will be avoided or minimized by utilizing the mitigations listed below and no significant adverse impacts are expected to occur as a result of implementing the proposed alternative.

The mitigation measures that will be required by the issuance of the Permit include:

1. Permittee shall contact surface lessee and DNRC Southern Land Office (SLO) at least 48 hours prior to any seismic activity on state Trust lands. The contact at the SLO is: Jeff Bollman, Area Planner, jbollman@mt.gov or 406-247-4404 (office) or 406-670-4642 (cell).
2. The Permittee shall be responsible for controlling any noxious weeds introduced by Permittee's activity on state Trust land and shall prevent or eradicate the spread of those noxious weeds onto land adjoining the subject Trust land.
3. All seismic activities are prohibited within 300 feet of any water features. Should any intermittent streams be carrying water during the proposed project, an alternative route at least 300 feet from the stream will be utilized. In cases where streams are not carrying water, Permittee shall not cross stream channels in areas with cut banks to reduce risk of erosion and surface damage.

4. All seismic activities are prohibited within 300 feet of any structures, wells, dams, springs or oil wells, abandoned or otherwise. Additionally, seismic activities are prohibited within 150 feet of pipelines. Section 20, T1N, R24E contains a stockwater well in SE¼NW¼NE¼ and the currently proposed line may not meet the 300' minimum separation and may need to be relocated. Section 8, T1N, R25E contains a petroleum pipeline in the N½N½ that runs from east to west roughly parallel to and south Shorey Road by approximately 200 feet.
5. All vehicle traffic must stay on established roads except when using the most direct, least erodible routes and will not be allowed to traverse steep slopes greater than 25%.
6. Seismic activity shall occur on dry or frozen ground only. No activity is allowed during wet or muddy conditions.
7. All vehicles and ATVs, particularly the undercarriage, must be power-washed prior to entering the tract to assure removal of dirt and plant material and seeds.
8. If any archaeological, historical or paleontological resources are located during the proposed activities, the Permittee shall mark the location and contact the Southern Land Office for immediate inspection. The DNRC reserves the right to restrict surface activity for the purpose of protecting significant cultural resources.
9. It is the responsibility of the Permittee to ensure the company that has been contracted to perform the seismic work under this permit has all required permits including, but not limited to, a valid permit with the county and has registered its bond with the Secretary of State's Office.
10. No vehicle oil changes or petroleum disposal shall occur on the State land.
11. All seismic vehicles will contain suitable fire extinguishers. No open burning is allowed on state land.
12. All gates will be left in the same position they are found and all fences that are taken down will be repaired promptly.
13. No trees or brush may be felled or removed without prior written approval of the DNRC Southern Land Office.
14. No heavy equipment staging or loading/unloading shall occur on Section 16-1N-24E or in the adjoining subdivision without prior written approval of the DNRC Southern Land Office. The DNRC may require that the Permittee provide advance notice to residents of the subdivision if heavy equipment staging is proposed on Angus Avenue or Circle, Shorthorn Drive and/or Corrienta Way.
15. The Permittee shall utilize the route agreed upon during the on-site visit on 13 June 2013 between the DNRC Southern Land Office (SLO) and Beyond Horizon, LLC to travel between the northeast corner of Section 16-T1N-R24E and the seismic line start point on the north side of the section. Any questions on the route location should be directed to Jeff Bollman with the DNRC SLO. Any deviation from this route shall require prior written approval from the DNRC SLO.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

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EIS

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More Detailed EA

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No Further Analysis

EA Checklist Approved By:	Name:	Matthew Wolcott
	Title:	Southern Land Office Area Manager
Signature: /s/ Matthew Wolcott		Date: June 19, 2013

Exhibit A – Proposed Seismic Line on Sections 16 and 20-T1N-R24E

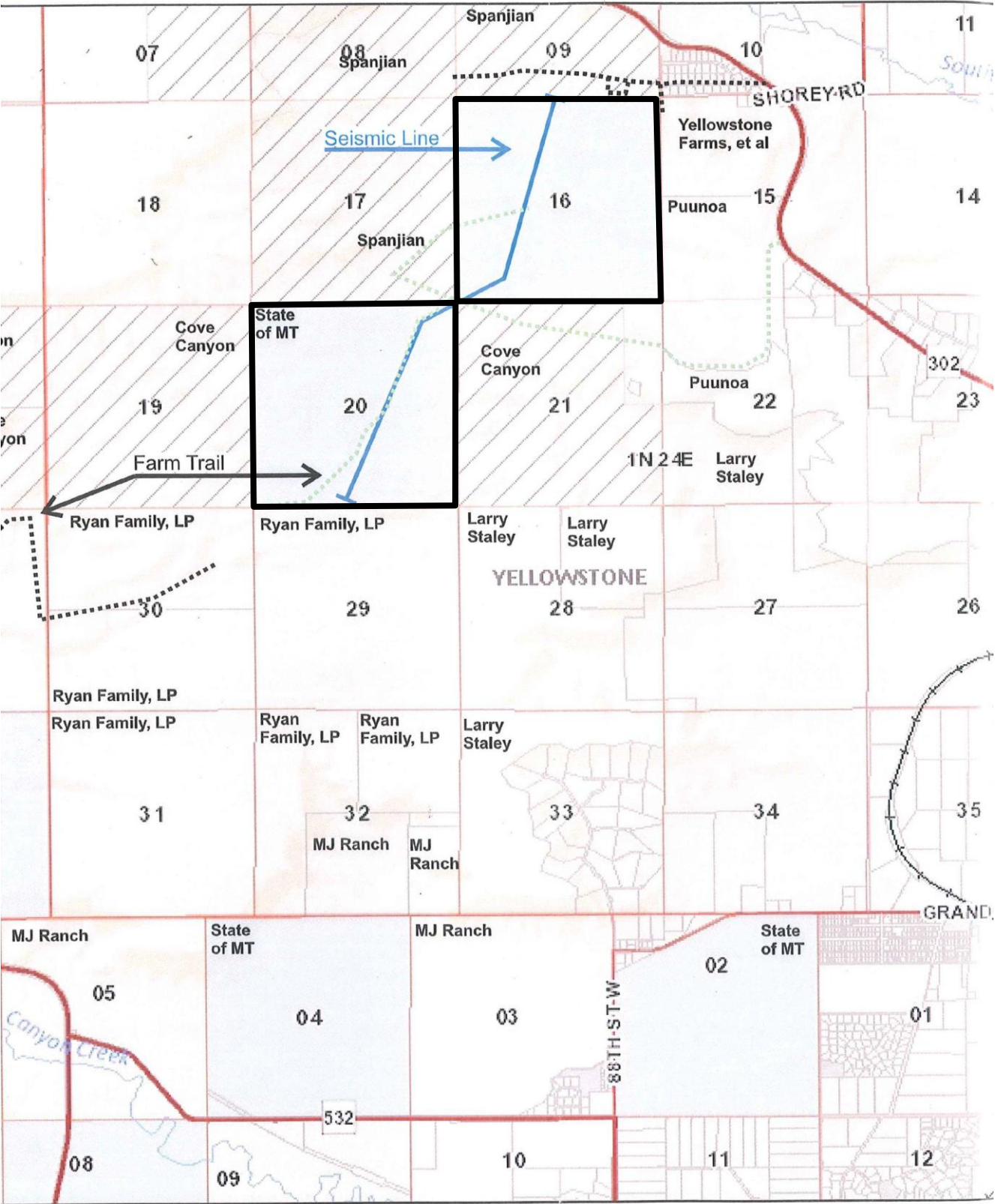


Exhibit B – Proposed Seismic Line on Section 8-T1N-R25E

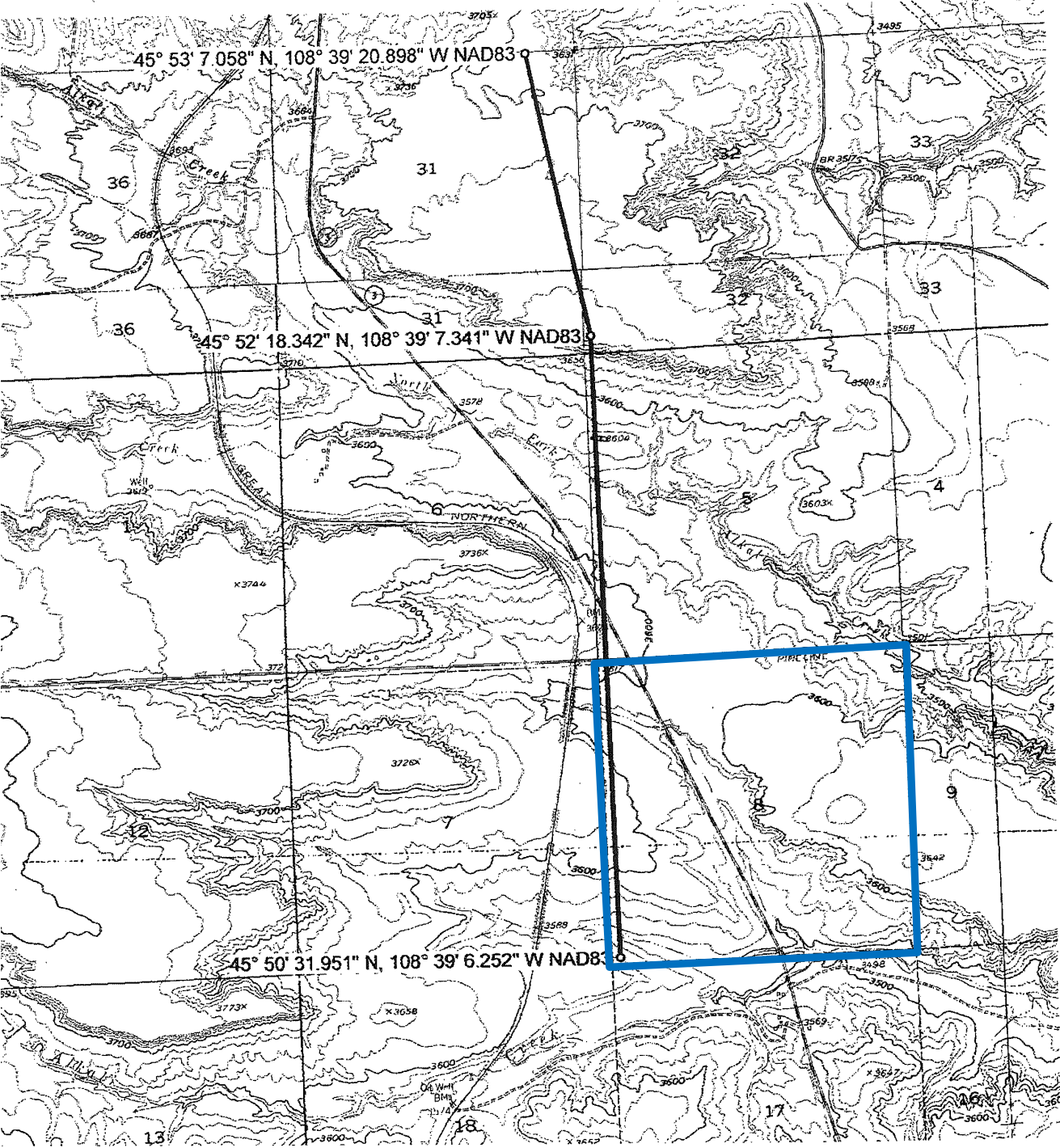


Exhibit C – Location of Stockwater Well on Section 20-T1N-R24E from water right file

